SECTION 03300 - CAST-IN-PLACE CONCRETE

A. SUMMARY

1. Cast-in-place concrete, including formwork, reinforcing, mix design, placement, and finishes for the following:

    a. Foundations and footings.
    b. Slabs-on-grade.
    c. Fill for steel deck.
    d. Foundation walls.
    e. Shear walls.
    f. Load-bearing building walls.
    g. Building frame members, including [**columns,**] [**beams,**] [**joists,**] [**and**] [**structural slabs**].
    h. Equipment pads and bases.

B. SUBMITTALS

1. Shop Drawings for formwork.

2. Laboratory test reports for mix design.

C. QUALITY ASSURANCE

1. Engage a concrete testing agency to test materials and to design concrete mixes.

2. Mockups to demonstrate typical joints; form tie spacing; and surface finish, texture, and color.

D. MATERIALS

1. Forms:

    a. Exposed Finish Concrete: [**Plywood**] [**Metal**] [**Metal-framed plywood faced**] [**Overlaid plywood**].
    b. Unexposed Finish Concrete: [**Plywood**] [**Lumber**] [**Metal**].
    c. Textured Finish Concrete: Match Architect's sample.
    d. Cylindrical Columns and Supports: [**Metal**] [**Glass-fiber-reinforced plastic**] [**Paper or fiber**] tubes.
    e. Pan-Type Forms: [**Glass-fiber-reinforced plastic**] [**Formed steel**].
    f. Carton Forms: Biodegradable paper.

2. Reinforcing:
    a. Bars: [**Deformed steel**] [**Galvanized steel**] [**Epoxy-coated steel**].
    b. Wire Fabric: [**Welded**] [**Deformed-steel welded**] [**Epoxy-coated welded**].

3. Concrete: ASTM C 150, Type I.

a. Aggregates: [**Normal weight**] [**Lightweight**].
b. Admixtures: [**Air entraining**] [**Water reducing**] [**High-range, water reducing**] [**Water-reducing, accelerating**] [**Water-reducing, retarding**].
c. Synthetic fiber reinforcement.

4. Related Materials:

a. Reglets.
b. Dovetail anchors slots.
c. Waterstops: [**Rubber**] [**PVC**].
d. Sand cushion.
e. Vapor Retarder: [**Polyethylene sheet**] [**Laminated kraft-paper**].
f. Vapor barrier.
g. Liquid Membrane-Forming Curing Compound: [**Resin based**] [**Water based**].
h. Underlayment compound.

E. MIXES

1. Compressive Strength (28 Day):

a. Normal-Weight Concrete: [**4000 psi (27.6 Mpa)**] [**3500 psi (24.1 MPa)**] [**2500 psi (17.3 MPa)**].
b. Lightweight Concrete: 3000 psi (20.7 MPa).

2. Mixing: [**Jobsite**] [**Ready mixed**].

F. INSTALLATION

1. Cover vapor retarder/barrier under slabs-on-grade with sand cushion.

2. Formed Finishes: [**Rough formed**] [**Smooth formed**] [**Grout cleaned**].

3. Slab Finishes:

a. Scratch: Surfaces to receive [**concrete floor topping**] [**or**] [**mortar beds for tile**] [**mortar beds for terrazzo**].
b. Float: Surfaces to receive trowel finish, and surfaces to be covered with [**waterproofing,**] [**roofing,**] [**or**] [**sand-bed terrazzo**].
c. Trowel: Surfaces exposed to view, and surfaces to be covered with [**resilient flooring,**] [**carpet,**] [**ceramic or quarry tile,**] [**or**] [**paint**].
d. Trowel and Fine Broom: Surfaces to be covered with [**thin-set ceramic tile**] [**or**] [**quarry tile**].
e. Nonslip Broom: [**Exterior concrete platforms**] [**Steps**] [**Ramps**].
f. Nonslip Aggregate: [**Concrete stair treads**] [**Platforms**] [**Ramps**] [**Sloped walks**].
g. Colored Wear-Resistant: [**Exterior slabs**] [**Interior slabs**].

G. FIELD QUALITY CONTROL

1. Testing Agency: Contractor employed.

END OF SECTION 03300